

REMARKS

Claims 1-19 are now pending in the application. New Claims 12-19 are presented herein for consideration. The Examiner is respectfully requested to reconsider and withdraw the rejection(s) in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 112

Applicants traverse the rejection of Claims 7 and 9-11 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point and distinctly claim the subject matter which Applicant regards as the invention.

Applicants have amended claims 7 and 9-11 to clarify the claims and to correct terms lacking antecedent basis and to correct noted relative terms. Applicant believes that this rejection is moot.

REJECTION UNDER 35 U.S.C. § 102

Applicants respectfully traverse the rejection of Claims 1-5, 10 and 11 under 35 U.S.C. § 102(b) as being anticipated by Murakami (U.S. Pat. No. 5,811,174).

Referring now to Claim 1, Murakami does not show, teach or suggest a first planar light transmissive material, a second planar light transmissive material, and a continuous layer of luminous material located between and extending substantially the length of the first and second planar light transmissive materials.

The plural, spaced luminous layers 3 in Murakami do not form a planar layer. This means that the second layer 6 must be a non-planar layer as well. Claim 1

requires a continuous layer of luminous material that is planar and that extends substantially the same length as the first and second planar layers. Having non-planar layers increases the cost of manufacturing the luminous panels.

Murakami does not show, teach or suggest the use of luminous particles. Rather, Murakami discloses the use of luminous inks.

Regarding Claim 2, Murakami does not show, teach or suggest a layer of luminous material that contains about 50 grams of the luminescent particles per 1000cc of the light transmissive resinous material.

Murakami teaches that the phosphorescent pigment must form at least 70 to 85% by weight of the phosphorescent layer. Murakami Col. 6, lines 22-39. In contrast, the luminescent particles of Applicant's luminous panel should be approximately 50g per 1000 cc of resin or about 5% luminous particles by weight of the luminescent layer. The luminous particles according to the present invention can be used in lower concentrations to reduce the cost of producing the panel while maintaining sufficient luminous intensity.

Claims 3-5, 10 and 11 depend directly or indirectly from Claims 1 and 2 and are allowable for the same reasons.

REJECTION UNDER 35 U.S.C. § 103

Claim 9 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Murakami (U.S. Pat. No. 5,811,174).

Murakami does not show, teach or suggest a partial or half silvered layer provided on the exterior surface of at least one of the first planar light transmissive material and the second planar light transmissive material. Murakami also does not show, teach or suggest a first planar light transmissive material, a second planar light transmissive material, and a continuous layer of luminous material located between and extending substantially the length of the first and second planar light transmissive materials.

The term “partial or half silvered” refers to a layer that allows light to enter in one direction but reflects light from the opposite direction. Paragraph 25 of Applicant’s Specification. Murakami does not disclose such a structure.

Claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Murakami (U.S. Pat. No. 5,811,174) in view of Royce 5,376,303.

Neither Murakami nor Royce show, teach or suggest a first planar light transmissive material, a second planar light transmissive material, and a continuous layer of luminous material located between and extending substantially the length of the first and second planar light transmissive materials.

Claim 7 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Murakami (U.S. Pat. No. 5,811,174) in view of Hao 5,885,483.

Neither Murakami nor Hao show, teach or suggest a first planar light transmissive material, a second planar light transmissive material, and a continuous layer of luminous material located between and extending substantially the length of the first and second planar light transmissive materials.

Claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Murakami (U.S. Pat. No. 5,811,174) in view of Kaz 6,177,029.

Neither Murakami nor Kaz show, teach or suggest a first planar light transmissive material, a second planar light transmissive material, and a continuous layer of luminous material located between and extending substantially the length of the first and second planar light transmissive materials.

New Claim 12 recites a luminous panel wherein light originating from outer surfaces of the first and second light transmissive materials is incident upon the layer of luminous material. The structure disclosed in Murakami includes a supporting layer 6 that reflects light. Light that is incident on the layer of luminous material in Murakami originates from one direction only. None of the references show, teach or suggest this structure.

New Claim 16 recites a marker including a first structure made of at least one of cement, mortar and brick and a luminous panel that is embedded in the first structure. Support for this claim appears in Paragraph 28 of Applicant's Specification. None of the references show, teach or suggest this structure.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt

and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 594-1982.

Respectfully submitted,

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ATTACHMENT FOR CLAIM AMENDMENTS

The following is a marked up version of each amended claim in which underlines indicates insertions and brackets indicate deletions.

1. (Amended) A composite non-powered luminous panel comprising:
a first planar [piece of] light transmissive material; [and]
a second planar [piece of] light transmissive material; and
a continuous layer of luminous material located between [provided on one side of the piece of] and extending substantially the length of the first and second planar light transmissive materials [material], wherein the luminous material [comprising] includes a light transmissive resinous material containing a suspension of luminescent particles.
2. (Amended) The non-powered composite luminous panel of according to claim 1 wherein the layer of luminous material contains about 50 grams of the luminescent particles per 1000cc of the light transmissive resinous material [further comprising a second piece of light transmissive material provided on the other side of the layer of luminescent material].
3. (Amended) The non-powered composite luminous panel according to claim 2 wherein the first planar light transmissive material is selected from the group consisting of transparent or translucent glass and plastic.

7. (Amended) The non-powered composite luminous panel according to claim 1 wherein the luminescent particles are comprised of a sinter expressed by a general formula $MO \cdot (n-x)\{aAl_2O_3^a \div (1-a)Al_2O_3^y\}B_2O_3:R$ wherein M represents an alkaline earth metal, R represents a rare earth element, $0.5 < a \leq 0.99$, $0.001 \leq x \leq 0.35$, $1 \leq n \leq 8$ [and a part of M may be replaced with at least one alkaline earth metal selected from the group consisting of Mg, Ca and Ba].

9. (Amended) The non-powered composite luminous panel according to claim 2 wherein a partial or half silvered layer is provided on the exterior surface of [adhesive] at least one of the first planar light transmissive material and the second planar [piece of] light transmissive material.

10. (Amended) The non-powered composite luminous panel according to claim 2 wherein a [top] one surface of the second planar [piece of] light transmissive material is provided with a completely mirrored surface.

11. (Amended) The non-powered composite luminous panel according to claim 2 wherein [a bottom] another surface of the second planar [piece of] light transmissive material is provided with a completely mirrored surface.